

Exhibit B

Dennis J. Seal, Ph.D., P.E.

**Seal Design & Engineering, Inc.
Human Factors and Product Safety
6461 Lake Circle Drive
Dallas, Texas 75214**

**Mr. Daniel C. Adams
Larson & King, LLP
Attorneys at Law
2800 Wells Fargo Place
30 East Seventh Street
Saint Paul, Minnesota 55101-4922**

13 August 2020

**Re: J. LaFrentz, et al v. 3M Company, et al
United States District Court-Southern District of Houston Division
*Civil No: 4:18-cv-4229***

Mr. Adams,

Per the request of your office and as a Professional Engineer (Texas No. 79090), I have been asked to investigate both the human factors and industrial safety areas of the above-referenced case. The primary issues in this case include (but are not limited to) employee exposure to asbestos materials and the methods, engineering processes, employee training and safety information as related to respiratory protection. The opinions expressed are based on my education and experience in relevant areas of human factors and product safety engineering and my review of materials available to me at the date of this report. I am being compensated for my expert services on an hourly basis of \$320.00 per hour.

I have been requested to investigate issues of this case and specifically address human factors elements as these areas of my expertise relate to safety analysis and hazard identification, job analysis and risk mitigation, employee training, warnings and safety labels, product packaging and advertisements as well as employee behavior and work practices.

My professional qualifications include the following:

- (1) Total of 40 years developing and testing human factors and safety standards as well as applying engineering design criteria for industrial, governmental and aerospace applications, consumer product designs, development of warnings and instructional materials and the enforcement of occupational safety.
- (2) Member of the original American National Standards Institute (Z535.1-5) committee responsible for published standards for warning labels, safety symbols, environmental signage, user manuals and related hazard mitigation criteria. The basis of the usage of warnings paralleled the adoption of these ANSI standards.
- (3) Academic teaching assignments at the University level in applied areas of human factors, information processing theory, product safety, risk mitigation practices, research and test methodology and industrial engineering.
- (4) Development and enforcement of OSHA 1910 training programs including the implementation of Hazard Communication (HAZCOM) Programs, employee training and the use of facility warnings and product labels at Fortune 500 Companies.

- (5) Supervision of the design, production and distribution of safety information (labels and technical instructions) for various forms of human interfaces including consumer products, avionic warning systems, heavy machinery, highway signage, manufacturing environments and safety equipment.
- (6) Extensive research and published materials for corporate safety programs including, but not limited to, equipment safety warnings, technical manuals, safety literature, hazard analysis, risk mitigation and hazard resolution methods.

A complete listing of my professional areas of expertise and affiliations are detailed on the attached CV, including a Summary of my Areas of Specialization. A Rule 26 reference list of case testimony is available upon request. A brief summation of my education and professional experience is detailed below.

I received my Bachelor's degree from the University of Cincinnati and Master's degree in Experimental Psychology and Statistics from Texas A&M University. I continued my graduate studies and research programs at Texas A&M University in College Station, Texas culminating in the Doctorate degree in Industrial Engineering in 1980. I currently hold Professional Engineering licenses in the states of Texas (No. 79090) and Wyoming (No. 15888). While in graduate school I prepared scientific proposals and was funded by different agencies to conduct research while applying statistical calculations and reporting results on topics ranging from information processing, memory and learning, safety instructions, technical manuals, signage and various forms of "hazard alert" messages. These research projects led me into other scientific and engineering fields of application where I participated in the design of consumer products (as a member of the design staff) for clients contracted with the Industrial Design firm, Henry Dreyfuss Associates, in New York City. Our firm designed many different commercial products including the original automated teller machines (ATMs) for Citicorp, aircraft interiors for Falcon Jet and American Airlines, workspace environments for AT&T/Bell Laboratories, as well as John Deere industrial and agricultural machinery. It was during this early stage of my career that I acquired the foundation methodology of identifying product hazards and specifically while working alongside corporate engineering and manufacturing departments. It was my responsibility to review drawings, product models and prototypes and to identify specific hazards unique to these products and develop risk mitigation processes. The determinations to use warnings, as an alternate method of mitigation, were based on engineering analyses addressing calculated probabilities of occurrence, severity of risk and the scientific determination of potential risk(s) of each identified hazard. I have continued over the span of 40 years to use the same scientific processes for determining the usage of warnings in each of the following categories:

- 1.Mechanical:** powered tools, industrial machinery, aircraft components;
- 2.Chemical:** known and established carcinogens (e.g. PVC, asbestos);
- 3.Electrical:** electrical power systems; mission equipment, navigation equipment;
- 4.Environmental:** manufacturing facilities, industrial hazards, fire suppression systems;
- 5.Consumer products:** firearms, hand tools, sporting equipment and entertainment products.

WARNINGS: American National Standards Institute (ANSI Z535.1-5)

During my affiliation with Henry Dreyfuss Associates and our design contracts with different product manufacturers, I was invited to become a member of the ANSI Z535.1-5 Committee to participate in the development of specific criteria for safety warnings, determination of use, required format, verbiage, graphics and colors. The ANSI Z535.1-5 Specifications were adopted as industry standards in 1991 and established the fundamental criteria for (1) the determination of hazard avoidance and warning applications; (2) recommended signal words (i.e. DANGER, WARNING, CAUTION), (3) graphical format and font size, as well as content of the label, and symbols or safety instructions (based on Human Factors criteria). For commonality purpose, ANSI collaborates internationally with ISO, the International Organization for Standardization, in efforts to protect consumers and end-users of products by applying the same class of warning standards for recognition, comprehension and ultimately the avoidance of "identified" hazards."

As a member of the ANSI Committee and throughout my professional engineering career, I have used the same methodology, statistical test procedures and methods of determination to identify the need for warning labels. On behalf of product manufacturers of machinery, power tools, chemicals, work environments, recreational products and other commercial products I have determined the "need" for safety warnings and subsequently developed specific warnings for manufacturers based on established ANSI criteria. Throughout my career, I have consulted in many litigated matters defending the use and adequacy of warnings used by manufacturers and have supported plaintiffs injured while using products where I have determined the use of warning labels were necessary and likely would have prevented injury or fatal consequences.

The opinions and conclusions documented in this report are based on my review of safety literature pertaining to occupational hazards while working in operations with the potential of creating asbestos dust. James LaFrentz worked various jobs over his lifetime beginning in the summer months of high school and continuing many years while working for General Dynamics/Lockheed beginning in 1979 until his retirement in 2005. LaFrentz worked different job assignments which more likely than not exposed him to asbestos dust.

For purposes of case evaluation and my summary of opinions, I have reviewed published literature as related to engineering controls, benefits of respiratory protection and documents pertaining to warnings, safety regulations and respiratory protection standards. I have also reviewed case specific legal documents including plaintiff's complaint and employment records. Specifically, in preparation of this report I have reviewed the following materials:

- (1) Plaintiff's First Amended Complaint;
- (2) Plaintiff's Second Amended Complaint;
- (3) Plaintiff's Verified Amended Complaint;
- (4) Plaintiff's Third Supplemental Rule 26(a) Disclosures;
- (5) Plaintiff's expert reports of Darrell A. Bevis filed on 06/23/2020, and Kenneth S. Garza filed on 06/12/2020;
- (6) Deposition transcripts of James LaFrentz Vol I, taken 11/14/2018 with Exhibits; J. LaFrentz Vol II, taken 11/15/2018 with Exhibits;
- (7) Plaintiff LaFrentz's Employment and Medical records;
- (8) Government Standards and Regulations (as related to respiratory protection and workplace safety): OSHA (29 and 30 CFR), 42 CFR Part84, ANSI Z535, NIOSH;
- (9) The 3M Model 8710 respirator and related packaging materials for relevant employment periods of James LaFrentz.

CASE BACKGROUND

Plaintiff James LaFrentz has alleged asbestos exposure during his employment years of 1979-2005 as an employee, initially with General Dynamics (GD) and retired from Lockheed Martin (in a purchase/merger arrangement). LaFrentz began work as a "drill press operator" in the parts fabrication department at GD. LaFrentz was assigned to the F-16 aircraft program and was responsible for drilling coupons/panels composed of honeycomb and metal plating. LaFrentz drilled ½" holes into the aluminum test panels which contained an asbestos containing material (ACM) applied for thermal transfer purposes. After drilling the holes LaFrentz would sand the panels using a small belt sander or a 'whirligig' to deburr the holes and surfaces of the panels.

During his deposition testimony Mr. LaFrentz was asked if his job of drilling the test panels created any dust and his response was, "Yes, very much so. It was very, very dusty....I saw the dust with my own eyes and had to wipe it off my face." (Deposition testimony of J. LaFrentz, Vol. 1, Page 69, Lines 1-9 and Lines 20-24) Mr. LaFrentz testified that when he first started drilling coupons, he "did not remember if he wore a mask, but doesn't think he did." LaFrentz stated he was never told he could be exposed to asbestos and that approximately 30-40 other GD employees were doing similar work in his assigned department. According to LaFrentz, no other employees wore masks in the parts fab department "while I was drilling or sanding the coupons." (Deposition testimony of J. LaFrentz, Vol I, Page 88, Lines 5-9)

LaFrentz testified he was also responsible for the "massive cleanup" once he completed a "bin of panels." LaFrentz would use a long-handled brush and clean his desk off (of dust) and if the panels were still dusty, he would use an air hose to blow dust off the test panels. He then used the brush to clean up the floor. (Deposition testimony of J. LaFrentz, Vol. 1, Page 88, Lines 11-20) According to Mr. LaFrentz's testimony, he did not wear a mask when he began working at GD and subsequently began to wear a mask when he realized how much dust his job created. Other employees in the parts fab department did not always wear a mask, there were no policies in place to use a mask." (Deposition testimony of J. LaFrentz, Vol. 1, Page 74, Lines 1-4)

LaFrentz has testified there was no safety training, fit-checking of masks, and never any enforcement at GD/Lockheed to wear any form of respiratory protection. LaFrentz was not aware of what products contained asbestos, what asbestos was or what the long-term risks were associated with asbestos dust exposure. General Dynamics did not instruct, or train its employees of the health risks associated with asbestos exposure. According to LaFrentz, he was not aware of "asbestos risks" or the potential of related diseases until approximately 1996 when a facilitator (at General Dynamics) "came down with mesothelioma." (Deposition testimony of J. LaFrentz, Vol. 1, Page 93, Lines 11-16)

It is my opinion Mr. LaFrentz was not aware of the asbestos dust hazards in his work environments while assigned the above referenced jobs at General Dynamics. According to his testimony, LaFrentz was never informed he was working with asbestos products or that asbestos products were a risk to his health. Though he claims to have not worn a mask when he first began working in the parts fab department, he also testified he began wearing a mask ("he thought was the 8710") when he would drill and deburr test panels. LaFrentz testified there were no respiratory protection policies in place at GD/Lockheed, and he had not reviewed any mask brochures, seen any advertisements, instruction sheets or warnings or other literature of any kind relative to respirator usage in his workplace. Although GD did hold 30-minute safety meetings each week, he did not recall any discussion concerning "hazards of asbestos dust." (Deposition testimony of J. LaFrentz, Vol. 1, Page 95, Lines 2-22)

Although air sampling had been conducted at General Dynamics in February of 1980, the test results had not been communicated advising employees of test results or of any health hazards. The designated GD safety engineer had collected workplace air samples and recorded concentration levels as high as 28.8 f/cc in the parts fab shop when the allowable limit (PEL) was 2.0 f/cc (Ex 2 of plaintiff's file). Mr. LaFrentz was made aware of these test results but any related health implications were never communicated to GD/Lockheed employees as required by OSHA 1910 regulations. Mr. LaFrentz stated that he first became serious about his health and personal workplace safety when a facilitator at GD became sick with mesothelioma in 1996. "It was at this time I realized what asbestos was." (Deposition testimony of J. LaFrentz, Vol. 1, Page 93, Lines 3-16)

There is lack of evidence demonstrating that the employers of James LaFrentz, while employed at GD/Lockheed (or other places of employment) adopted the required safety programs with the intent of (1) alerting their employees to risks associated with asbestos dust exposure, (2) providing suitable respirator protection (in accordance with applicable standards with respect to usage, fit tests and checks, maintenance and training, (3) adopting suitable engineering dust controls as well as, (4) continually monitoring the work environment while assessing the degree of employee exposure to asbestos dust.

Relative to defendant 3M I have been asked to review the information contained on the packaging of the 3M Model 8710 respirator as well as other safety information for the relevant employment periods of Mr. LaFrentz. It is my opinion that the 3M respiratory devices do not present any risk of hazard to the users of this safety product. Based upon the information I have reviewed any workplace hazards to which Mr. LaFrentz was exposed were not caused by 3M products. It is more likely than not that the workplace environments, including product related materials (i.e. ACM) and the job operations performed by LaFrentz were the sources of asbestos exposure.

The safety literature in the area of warnings has demonstrated that warnings and safety instructions are most often ignored if the employer does not instruct employees and inform them of workplace hazards. The perception of a specific hazard and the associated levels of risk are the primary motivators for a change in behavior, i.e., the use of proper respiratory protection. Numerous studies in the areas related to warnings and safety label efficacy demonstrate the greater the perceived level of risk the greater the motivation to avoid the identified hazard. Fundamental to this finding is the premise that the "risk level" and "hazard level" must be known. Employees must be trained and made aware of specific hazards in their working environment. It is my expert opinion that Mr. LaFrentz did not receive appropriate hazardous training and specifically not with respect to the hazards of asbestos dust and the need for proper respiratory protection. LaFrentz was not aware of the severity of risk associated with asbestos dust exposure and the mitigation methods (e.g. substitute materials, engineering dust controls) that must be established and implemented by his employers. The hazard identification and resolution process, including related training programs, are the responsibility of the employer and must be enforced for maximum employee safety.

In summary of my opinions, 3M 8710 respirators do not present a personal risk of hazard. Since not presenting a personal risk of hazard, I am of the opinion that the 3M 8710 respirator would not require warnings, either on the packaging or the product itself. Furthermore, it is my expert opinion that the 3M packaging for these products, including the instructions and limitations, were appropriate in design, content and presentation during relevant times of Mr. LaFrentz's employment.

Warnings, safety instructions, and use limitations are forms of communication for alerting employees to potential hazard risks in the working environment. The product packaging for the 3M respirators during the relevant times included appropriate safety information addressing “uses and limitations.” However, the efficacy of such warnings and packaging information is dependent upon the employee’s awareness of a specific hazard and the risk level of each known hazard. Employers must identify each workplace hazard and train employees accordingly and must first work towards using non-toxic materials, secondly, adopting engineering controls (e.g. dust removal methods) and lastly relying on the temporary use of respiratory protection when exposure limits are exceeded.

This report is based on case specific documents as described earlier, including industry-accepted publications and journal published literature. I reserve the right to revise the expressed opinions should additional materials become available.

Respectfully Yours,



Dennis J. Seal, Ph.D., P.E.
Seal Design and Engineering, Inc.
Human Factors/Product Safety



Dennis Seal's Deposition and Trial Testimony
2009-2020

SEAL ¹	DATE	CASE
Deposition	3/13/2009	<i>Denton Crull, et al. v. A. W. Chesterton Company, et al.</i> Case No. RG0840466 Alameda County, California
Deposition	3/30/2009	<i>John Scarduzio v. 3M Company, et al.</i> Case No. 08-L-643 Madison County , Illinois
Deposition	3/18/2011	<i>William R. Dennis, v. Asbestos Defendants (B P)</i> Case No. CGC-09-275157 San Francisco County, California
Deposition	5/7/2015	<i>Jessie Gray v. 3M Company, et al</i> 13-PL-CC00036 Pike County

¹ Seal's Hourly Fee: \$320

Deposition and Trial Testimony of Dennis Seal
2009-2020

Deposition	2/19/2016	<i>Elsa Clementir v. 3M Company, et al</i> <i>BC506479</i> <i>Los Angeles County</i>
Deposition	2/19/2016	<i>Elsa Clementir v. 3M Company, et al</i> <i>BC506479</i> <i>Los Angeles County</i>
Deposition	5/12/2016	<i>Fred Hill, et al. (Estate of Marion Russell Reynolds)</i> Case No. 05-C1-00589 Commonwealth of Kentucky, Perry Circuit Court
Deposition	7/13/2016	<i>Van Michael Parker v. 3M Company</i> Case No. 15-369-NJR-PMF United States District Court, Southern District of Illinois

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Deposition and Trial Testimony of Dennis Seal
2009-2020

Deposition	2/16/2018	<i>Fred Williams v. 3M Company</i> Case No. 16-CI-01061 Commonwealth of Kentucky, Pike Circuit Court
Deposition	10/8/2018	<i>Ida McCarthy v. 3M Company</i> Case No. 15-5621 Commonwealth of Massachusetts, Middlesex Superior Court
Trial	12/17/2018	<i>Ida McCarthy v. 3M Company</i> Case No. 15-5621 Commonwealth of Massachusetts, Middlesex Superior Court
Deposition	1/10/2019	<i>Terry Coleman, et al., v. 3M Company</i> Case No. 16-CI-238 <i>David Allen, et al., v. 3M Company</i> Case No. 16-CI-159 Knott County Circuit Court
Deposition	2/15/2019	<i>Richard W. Lewis and Diane J. Lewis v. 3M Company, et al</i> Case 18-2-09747-4 Superior Court of Washington for Pierce County
Deposition	4/11/2019	<i>Dennis Slone and Corbin Burke v. 3M Company</i> Case No. 17-CI-00846 Commonwealth of Kentucky, Pike Circuit Court

Deposition and Trial Testimony of Dennis Seal
2009-2020

Deposition	6/7/2019	<i>Apostolos Agrios, an Individual; Ann Agrios, an individual, v. 3M Company</i> Case No. BC -715172 Superior Court of the State of California, County of Los Angeles
Deposition	9/6/2019	<i>Valerie Jean Culver, as Personal Representative of the Estate of Robert D. Larson, Deceased, and Bessie Larson v. 3M Company, et al.</i> Case No. 18-2-03806-5-SEA Superior Court of Washington, King County
Deposition	9/6/2019	<i>Wayne Wright, Individually and as Personal Representative for the Estate of Warren Wright, Deceased v. 3M Company et al.</i> Case No. 18-2-03806-5-SEA Superior Court of Washington, King County
Deposition	8/7/2020	<i>Larry L. Roemmich and Gloria Roemmich, husband and wife</i> Case No. 20-2-00926-1-KNT Superior Court of Washington, King County

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EDUCATION:

Ph.D., Industrial Engineering/Human Factors and Product Safety
Texas A&M University, College Station, Texas, 1980
M.S., Experimental Psychology/Information Processing & Learning
Texas A&M University, College Station, Texas, 1974
B.A., Psychology, University of Cincinnati, Cincinnati, Ohio, 1972

PROFESSIONAL EXPERIENCE:

L-3 Com/AIRBORNE INTEGRATION SYSTEMS, INC. 1985 – Present
Airborne Integration, Inc., Waco, Texas
(Formerly Raytheon Systems and Chrysler Technologies)
Richardson, Texas

Senior Principal Engineer: Human Factors and Product Safety

- Director of Human Factors and Safety Engineering for all Corporate Programs
- Conduct research and qualification tests to support program efforts in product development and subsystem design and integration.
- Apply Human Factors and Safety criteria in the design of visual displays and controls, workstation layouts, aviation systems, hazard identification and risk mitigation, warnings and alerting devices, software and technical user manuals, and operator/maintainer environments.
- Establish program plans, test procedures, and analyze test data and report results in technical documentation and/or at scheduled Design Reviews (e.g. PDR, CDR, TIMs).
- Prepare/manage budget and technical documentation for contract proposals.
- Establish/maintain Corporate Hazard Communication Programs (OSHA 1910) for employee training in safety and health, including workstation evaluations, facility safety, HAZCOM initiatives, lift/weight issues, safety warnings and training.
- Integrate human engineering and safety criteria with mechanical and electrical engineers, software programmers, environmental test, quality control, and manufacturing departments during each appropriate design phase.

TEXAS INSTRUMENTS, INC., Dallas, Texas 1983 – 1985
Director, Human Factors/Ergonomics – Consumer Products

- Managed Human Factors Department for new product design, personnel staffing, administration and budget, product development activities, and test laboratory.
- Organized sample populations, methodology and research efforts for prototyped product tests (e.g. keyboards, joystick controls), analyzed results, and articulated production recommendations to the design staff.
- Establish Corporate Ergonomic product design criteria for U.S. and Japan Product Centers.
- Integrated Human Factors design criteria with Industrial Design, Graphics, Software, Marketing, Packaging, and Manufacturing staffs.

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HENRY DREYFUSS ASSOCIATES, New York, New York 1979 – 1983
Senior Human Factors Engineer – Industrial Design/Consumer Products

- Project activities included implementing human factors and safety requirements for consumer product designs. Also conduct research and pilot studies, as well as evaluate scaled mock-ups and prototypes in support of new product development.
- Worked closely with clients (e.g. AT&T, Falcon Jet, John Deere and Company, CITICORP, LearJet, Polaroid, and American Airlines) during all phases of product design to ensure human factors, safety and ergonomic requirements were implemented in final production.
- Served as a committee member of American National Standards Institute (ANSI Z535) for the purpose of establishing industrial standards based on human perception, detection, and comprehension of displayed information for warnings, symbols, and visual displays. Standards were adopted in 1991 for industry-wide use on commercial and industrial products.

SOUTHERN METHODIST UNIVERSITY, Dallas Texas 1985 – 1986
Adjunct Professor, Human Factors and Industrial Ergonomics
Operations Research and Engineering Management Department
Taught Human Factors/Product Safety courses to undergraduate and graduate level students.

TEXAS A&M UNIVERSITY, College Station, Texas 1977 – 1979
Visiting Instructor, Department of Psychology
Taught courses in Introductory, Industrial and Developmental Psychology to undergraduate and graduate level students.

DEPARTMENT OF TRANSPORTATION, Austin, Texas 1977 - 1979
Project Coordinator; Governor's Office of Traffic Safety

- Program Manager for D.O.T. project evaluating interactive effects of vehicular design, vibration/noise levels, highway design, perceived rates of speed, and comfortable driving speeds.
- Responsibilities included proposal preparation, contract and budget coordination, supervising research assistants, data analysis, organizing progress reports, and presenting the findings to the Department of Traffic Safety.

TEXAS TRANSPORTATION INSTITUTE, College Station, Texas 1975- 1977
Research Assistant, Texas A&M University

- Conducted studies to aid in the design and implementation of real-time information displays that were used on urban freeways and parallel alternative routes.
- Display designs were based on information processing theory, visual recognition, conspicuity and reaction times of drivers during simulated highway driving maneuvers.
- Results of study were used to publish the Texas Manual on Uniform Traffic Control Devices (for streets and highway application).

Dr. Dennis J. Seal

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CURRENT RESPONSIBILITIES:

Director of Human Factors/Ergonomics and Product Safety engineering for corporate engineering. Engineering programs include systems design, product development and qualification tests, subsystem components, product designs and integrations, facility safety, aircraft modifications and airborne communication systems.

As facility human factors and safety engineer responsibilities include continued compliance to OSHA HAZCOM, Environmental Protection Agency (EPA), National Institute of Occupational Safety and Health (NIOSH), American Disabilities Act (ADA), and American National Standards Institute (ANSI).

Also responsible for site surveys, product and systems evaluation, hazard identification, safety warnings (ANSI Z535), and hazard resolution applications at all engineering, production and manufacturing phases.

Primary functions on engineering programs include workstation environments and component interface designs, anthropometric/operator studies, lighting and acoustic measurements, operator tasks and behavioral analyses, warnings, user manuals and training, design of controls and visual displays, safety and health reviews, mock-ups and prototype evaluations, ergonomic analyses, software applications, and final system integration and qualification tests.

AREAS OF INTEREST:

Product functionality and safety, product testing and qualification, mission-control environments; information processing theory and learning; hazard identification/resolution; warnings/signs and labels; quantitative methods; human factors in aviation; transportation safety.

PROFESSIONAL MEMEBERSHIPS:

Registered Professional Engineer, State of Texas (P.E. 79090)
Human Factors and Ergonomics Society
Ergonomics/Occupational Safety and Health
American National Standards Institute (ANSI)
Consumer Product Safety Commission (CSPC)
Electronic Industries Association (EIA G-45)
Aircraft Owners and Pilots Association (AOPA)

SECURITY CLEARANCES:

TOP SECRET (Active)
COMSEC (Active)

